In the Claims:

1. (Original) A preamble to signify a transmission, the preamble comprising:

an expected sequence field, the expected sequence field to contain a first sequence of unscrambled values, wherein the first sequence of values is known by a receiver; and

a synchronization field following the expected sequence field, the synchronization field to contain a second sequence of values scrambled by a scrambler.

2. (Original) The preamble of claim 1, wherein the first sequence is inserted into the preamble before the remainder of the preamble has been modulated.

3. (Original) The preamble of claim 1, wherein the first sequence is inserted into the preamble after the remainder of the preamble has been scrambled.

4. (Original) The preamble of claim 1 further comprising a start frame delimiter following the synchronization field, the start frame delimiter to contain a third sequence of values scrambled by the scrambler.

5. (Original) The preamble of claim 1, wherein the preamble is an enhancement to an existing preamble, and wherein the expected sequence field and the synchronization field combined is equal in duration to a synchronization field in the existing preamble.

6. (Original) The preamble of claim 5, wherein the expected sequence field is transparent to a receiver expecting the existing preamble, and wherein the receiver may synchronize to the

synchronization field.

7. (Original) The preamble of claim 1, wherein the first sequence of values is an arbitrary sequence of values, known to both a transmitter and the receiver.

8. (Original) The preamble of claim 1, wherein the first sequence of values is a sequence of 1's.

9. (Original) The preamble of claim 1, wherein the first sequence of values is a sequence of 0's.

10. (Original) The preamble of claim 1, wherein the first sequence of values is a sequence of alternating 1's and 0's.

11. (Original) The preamble of claim 10, wherein the first sequence of values is a combination of equal length groups of alternating 1's and 0's, wherein each group is of length greater than one value.

12. (Original) The preamble of claim 1, wherein the first sequence of values is periodic in nature.

13. (Original) The preamble of claim 1, wherein the expected sequence field and the synchronization field combined is equal to a multiple of the length of a pseudo-random number

sequence, and wherein the expected sequence field is eight (8) times the length of the pseudo-random number sequence.

14. (Original) The preamble of claim 1, wherein the preamble can be used in a digital communications network.

15. (Original) The preamble of claim 14, wherein the digital communications network is wireless.

16. (Original) The preamble of claim 15, wherein the digital wireless communications network is adherent to an IEEE 802.11b technical standard.

17. (Original) The preamble of claim 15, wherein the digital wireless communications network is adherent to an IEEE 802.11g technical standard.

18. (Original) A method for low power preamble detection comprising:

detecting signals on a transmission medium;

using analog circuits to match samples of the detected signals with a copy of an expected sequence, wherein the expected sequence is transmitted as part of the preamble; and

enabling digital circuitry if the samples of the detected signals match the copy of the expected sequence.

19. (Original) The method of claim 18 further comprising after the enabling:

training receive circuitry with a remainder of the preamble; and

providing data received after the preamble to the digital circuitry for processing.

20. (Original) The method of claim 19, wherein the method repeats after the providing.

21. (Original) The method of claim 19, wherein training comprises adjusting equalizers and filters based on the remainder of the preamble.

22. (Original) The method of claim 18 further comprising after the enabling:

disabling the digital circuitry once processing related to the preamble is complete; and

repeating the detecting, using, and enabling.

23. (Original) A method for preamble detection at a receiver comprising:

determining an operating mode of a transmitter;

if the transmitter can transmit an expected sequence field in a preamble,

detecting signals on a transmission medium;

using analog circuits to match samples of the detected signals with a copy of an expected sequence, wherein the expected sequence is transmitted as part of the preamble;

enabling digital circuitry if the samples of the detected signal match the copy of the expected sequence;

the method further comprising if the transmitter does not transmit an expected sequence in a preamble,

detecting signals on the transmission medium; and

using digital circuits to process samples of the detected signals to search for a specific pattern.

24. (Original) The method of claim 23 further comprising after the enabling:

training receive circuitry with a remainder of the preamble; and

providing data received after the preamble to the digital circuitry for processing.

25. (Original) The method of claim 23 further comprising after the second using:

training receive circuitry with a remainder of the preamble; and

providing data received after the preamble to the digital circuitry for processing.

26. (Original) The method of claim 23, wherein the receiver remains in an operating mode depending on the operating mode of the transmitter until the receiver is reset.

27. (Original) The method of claim 23, wherein the receiver remains in an operating mode depending on the operating mode of the transmitter until the receiver moves out of range of the transmitter and begins communicating with a different transmitter.